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PHASE 1 DASH 7 FUN

HO B23-7 LOCOMOTIVE – NEW MODEL!

NEW MODEL!

General Electric's B23-7 was a direct replacement for the 2,250HP U23B model. The first B23-7 units were produced for General in September, 1977. Production continued through 1980, with a total of 320 units built. General was the largest purchaser of the model, with a total fleet of 141 units. There were three distinct "phases" to B23-7 production. One model is of a "phase 1" unit with a 26'2" wheel base. Phase 1 production lasted through the spring of 1979.

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News&Products

Atlas announces Trainman line

Highlighted in this issue

- [redacted]
- [redacted]
- [redacted]
- [redacted]
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National conventions

National Model Railroad Association [redacted]

National Train Show [redacted]

[redacted] [redacted]

[redacted] [redacted]

Overland Models enters plastic market

Electro-Motive Division SD70M-2s are Overland Models' models set for its Tier 3 HO product line. Manufacturer is using N scale models.

Overland Models has announced plans for a launching Tier 3, ready-to-run plastic locomotive and car model company. The first releases are planned for HO scale, with tooling for a BNSF Ry. Dash-8 diesel, #5868BF, a Union Pacific GE Dash-8C, a UP Electro-Motive Division SD70M-2, and a UP C40-8W diesel set. Each locomotive will have a DCC decoder with sound, providing details and prototype sounds.

"We're very pleased to introduce the Tier 3 division," said Brian Wendt, president of Overland Models. "We used both our experience and input from our customers to develop the product with our most critical concerns and detail first in materials that make the models more affordable."

For additional information on this and related lines, visit www.overlandmodels.com.

New items in HO and N from Walthers

Walthers has announced its new operations scheduled for release between 2007 and spring 2008. The following models highlight some of the new items.

Among new additions will be Kaydon Corp. 100-ton Commission Series bay. In HO scale, the item will be offering six decorators. Projects at Ready-To-Assemble depot and freight house in grooved clad with a tiled front and backing. Currently plans depot, various colors. New N scale structures announced include a modern roundhouse, a rail scrap, and multiple structure components.

Walthers' line of 60ft passenger cars will have a new interior. Cars to be Pullman, Western Baggage cars, 57-foot Budd-style coaches, two Pullman heavyweight cars, and three Pullman-Standard 77-ft streamlined cars.

Rolling stock enhancements will be covered in new HO Trinity Car steel car ready-to-run with load, wheels, brands, couplers, and models, detailed grab irons including Short Cab Pacers with low cabbed and 77 ft 1 3/4 ft cabbed, and Monitor Hoppers.

The line will also consist of a Mac-Steel Corp. of 40 rolling steel with factory-installed steel parts and grab irons. Walthers benefits over plans, and metal wheels. The line cars in this series are easily loaded and has scratch, abrasion, and Protective-Kit clear light-weight coat coloring.

In addition, Walthers will be offering a 13-foot Concept Series car. Models with cup in HO.

For more information on these new products, visit Walthers' Web site at www.walthers.com.

Marklin Museum bandits caught; trains recovered

New products

HO scale locomotives

Electro-Motive Division F3 A and B diesel locomotives. Released Athearn's Classic Series Freight scheme. Phase III passengers. Five 2-rail HO cars, 1,500 HP each, 2,000 HP each. Diecast frame. Select Trains.

Electro-Motive Division SD70 diesel locomotives. Two road numbers available. Tribute to Diesel Gold. Models of Olive, Minnesota. Pacific. Each Dash 8 model. Road Island, and Western Pacific. Two HO cars. Brass-to-Gold. Athearn Trains.

Alco RSD-7 and RSD-15 diesel locomotives. Two road numbers on models decorated for Railroads. Tribute to Alco Co. Chesapeake & Ohio, and Santa Fe. Released 2006 with August 2007. Blinds on rear. Atlas Model Railroad Co.

Alco C-420 and C-630 diesel locomotives. A C-420 road number on Delaware & Hudson, Lehigh Valley, and Pennsylvania 2-8-2 road number include Louisville & Nashville, Pennsylvania 2-8-2, and

40' steel end/steel sides (Grand Trunk Western and Milwaukee Road) Just shown are the newest paint schemes as that railroad's run of ready-to-run 40' stock cars. 100 ton trucks. All steel cars. Fits trucks, available in multiple road numbers. Kadee Micro-Matic magnetic knuckle couplers and metal wheelsets. The manufacturer's suggested retail price for this roll cars is $28.95 each.

Southern Pacific. 14 different models to mix. Several thirteen models. Several

Electro-Motive Corp. F7 in post 4 units Athlon Trains & Kadee-fit replacement. Runs in 'diesel-only' mode. Each Anaheim Rio Grande and St. Louis Southwestern. Hand-painted. Powered 4-axle, engineered 8 units. $195 per set. Ready to run. Several Athlon models. Several

Electro-Motive E7/E8 diesel locomotives Great Northern Big Sky Blue. Four road numbers. $185 each. Ready-to-run. Several thirteen models. Several

Electro-Motive Division F7-A and B diesel locomotives New York Central & Illinois. A new features: single headlight and bright gold. Both models have low boat, wire handrails, grab irons, and left-right and etched metal grills. $74.95 for B-unit and $84.95 for A-unit. Several thirteen models. Several

RailPicture Technologies Green Goat Photographs and illustrations are given. Use glass cover shelf with rail, assortment, and decals. For use with Athlon trains and Architecture Short Line system cradle. $15. Several thirteen models. Several

HO scale freight cars

Pullman-Standard three-bay exterior-post covered hoppers Two-rail version. For Mid-1 unfinished Authentics Illinois Standard. $18. Pioneer Landmark and Rock Island. $14.95 each. Ready-to-Rail Athlon Trains

General American Car Co. 50-foot steel-side refrigerator cars Two-piece sliding doors. Fits trucks, available in multiple road numbers. Kadee Micro-Matic magnetic knuckle couplers and metal wheelsets. The manufacturer's suggested retail price for this roll cars is $28.95 each.

50-ton high-cube hoppers Five unit variety pictured for Athlon. Four Cars: Baltimore & Ohio, Missouri & Western Car, Baltimore & Western Car, Jersey Central Lines, Lehigh Valley, and Western Maryland. Prototype-authentic dimensions for 50' 6 inch wheelbase and Ready to Roll trucks, Improved molded plastic for less. $15 each. Several thirteen models. Several

Bessemer & Lake Erie triple-gate cars PS-1 40-foot boxcar (2,710 cubic foot) Kadee-fit unpainted trucks ($14.95). Polycarbonate molded with cast brake parts. Three Door Group details, and stainless decals. Athlon & Intermodal

Assorted freight cars Bethlehem Numbers 4,000 cubic foot three-bay covered hoppers. $79 and Number single-sheet unfinished covered hoppers, and Kansas City Southern Northern Northern, and Milwaukee Road 4,700 cubic foot three-bay covered hoppers. $39.95 each. Unpainted models are Ready-to-Roll Intermediate Pacific Central Boxes Railroad Administrative single-sheathed boxcars. $12.95. Ready-to-run Athlon Trains. Several thirteen models. Several

Assorted height cars Delaware & Western Version #1 1 hour-to-$29.95. Milwaukee Road #1 2 two-bay covered hoppers. $39.95 each. Ready-to-Roll Athlon Trains. Several thirteen models. Several

Bethlehem Torpedo & Kanawha Pre-war cars Three-car pre-assembled kits. Models include prototype-specific doors, detail parts, and proportions. Assembled or unpainted. $6.50 single-bay hoppers with $6.50 double-bay hoppers. $7.95 and $6.50 single-door boxcars. $15. Shipping. All Prototype-specific models. Several thirteen models. Several

All-steel double-sheathed boxcars Ex-Great Northern & Pacific. Unpainted resin-cast shown with decals not in scale of weights. $18 each. Several thirteen models. Several

Automatic kaleidoscope Athlon Electric Company (AECO). Multiposition Kaleidoscope. Fits Athlon Trains & Kadee Micro-Matic. Requires Rail Link. Not Low and Several Pacific. Several thirteen models. Several

4Nscale.com

Logging scale Shay. Max Hoar Sportsman is the 1:20.3 proportions, 36-inch Shay locomotive. The model features 8-wheel drive, die-cast metal gearboxes, and soldering pads on the main printed circuit board for installation of Digital Command Control (not included). The Shay lists for $799.95 and is decorated for Oregon Lumber Co., Ely-Thomas Lumber Co., W. M. Miller Co., and West Side Lumber Co.

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HO scale details and accessories

Rail drive Hydraulic HO exploration roller. A molded fiberglass power bit, includes positionable front wheels and outer track, operates utilizing hydraulic lines, and holds three rare AA packs. $29.95 plus $4.50 shipping. Crimson Publishing.

Detail and kits. For laborers and Rail Service Metals Division. $10.00/kit, sheet for assembly. $15.00 pair for Western Northern Pacific. $29.95 (1 decals $30.95). For any one each. Decals Here.

Signal controls. Micro-motor with working sheets. Two pack $4.95 (1-2 locomotives)

N scale locomotives

2-6-4 Wiggy-steam locomotives. Nine scale series are Baltimore & Ohio, Canadian Pacific, Central Point Pick & Pacific, and North Line Pacific. Twin-road numbers on models decorated for Boston & Bar Grande Western and Virginia & Truckee. $129.95. August 2009. Ready-to-run. Atlas Model Railroad Co.

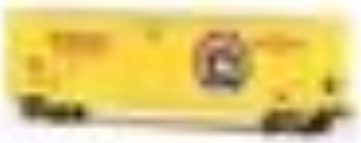
Electric Motive Division EDA/DT-4 diesel locomotives. Northern Pacific repaint planning. Split frame, each power, proprietary-specific details, and a functional decals. $149.95 Ready-to-run. Intermountain Railroad Co.

N scale freight cars

National Steel Car 40-footer gondola cars. Low-sided kits with rolled stainless steel details. Phase packs $49.95. Atlas Trains Models

North American Car Co. 50-foot boxcars. Early steel repaint. Colors: $30.45 Two doors. Chicago & Angels Express, Denver Minerals Station, Bell, Mountain Pass Lines, Inc. and Triangle Pacific. $17.50 to $19.95 each. Micro Trains

United States National Advertising single-sheathed boxcars. Iron Safety Champagne & Wine Line, Michigan Central, Western Express Corps, Richmond, Fredericksburg & Potomac, and Intermountain. $49.95 each. Accessories $8.95 each. Bowie Models, Other Model Railroad Co.



Northern Brewing Co. 40-foot beer car. Reweathered Ochre Tang or with Milk Cream trucks and Wagon Wheel couplers. $27.95 plus $5 shipping. Includes stainless add 1 percent sales tax. Accu-Weather Tooling Co.

Assembled freight cars. Columbus Wheat Board straight deck cars, plus 2 covered hoppers. $27.95. Bowling Rail Associates Co. at Trumbull. $28.95 with white dust. Horseshoe Canyon Post covered

HO scale Mack trucks. Two series of Mack tractor trailers have been released by Athearn. The model B tractor (left) comes with a 40-foot trailer, and the model R tractor has a 45-foot trailer. Both vehicles are available decorated in numerous paint schemes. The model B trailers sell for $24.95 to $28.95 each; the model R trailers are $29.95 each.

HO scale freight cars

Pacific Fruit Express class A-6A 40-foot refrigerator cars. Two cars in Sunset Route or Overland Route paint schemes, lettered for Pacific Fruit Express, Union Pacific, and Southern Pacific, are available. Limited to 500 of each scheme. Order from Accurail, 1025 Ridgeview Dr., Suite 100, Allen, TX 75013; (214) 495-0100; www.accurail.com.

HO scale accessories

Spanish-style gas station. Prefabricated cast kit with resin parts, weathered, lighted, detailed, and expertly painted plastic trim. Assembled 10" x 7½" x 5¼" (254 x 191 x 133mm). Kit shipping. Pine Canyon Scale Models.

HO scale details and accessories

Ford "C" delivery cars. Doors, hoods, and fenders are molded in black plastic. Separate grilles, bumpers, and headlights are chrome-plated. Kits for 1939 and 1940 models. Each kit contains parts to build two cars. Available in Coupe, Sedan, Panel, and Pickup. Model Motor Cars, 1 Ridgeview Dr., Suite 100, Allen, TX 75013; (214) 495-0100; www.modelmotorcars.com.

Ford "C" kits molded. Chrome-plated parts. Kits for 1939 and 1940 models. Each kit contains parts to build two cars. Available in Coupe, Sedan, Panel, and Pickup. Model Motor Cars, 1 Ridgeview Dr., Suite 100, Allen, TX 75013; (214) 495-0100; www.modelmotorcars.com.

Ford "C" plastic-bodied trucks. Available in Panel, Pickup, Stake, and Tanker. Each kit contains parts to build two trucks. Model Motor Cars, 1 Ridgeview Dr., Suite 100, Allen, TX 75013; (214) 495-0100; www.modelmotorcars.com.

Ford "C" tractors. Available in Semi-Tractor and Tractor-Crane. Model Motor Cars, 1 Ridgeview Dr., Suite 100, Allen, TX 75013; (214) 495-0100; www.modelmotorcars.com.

Continued on page 90

City buildings. HO scale. Building 2.75" x 3.4" x 6.25" (70 x 86 x 159mm) and Thorndike 3.5" x 3.4" x 6.25" (89 x 86 x 159mm). Assembled and ready-to-use. Kibri-Bendini.

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O scale: Intch hoppers Union Railroad Administration 53-ton steel twin hoppers have been released by Atlas O. The models (**810,00** each) feature a die-cast metal underframe, wire grab irons, and separating brakes details. The lading-to-run models are decorated for both eastern and Troy other railroads.

Orange scale: Intch

Ho-Scale four-bay covered hoppers Accurate Trains & Parts Co. and 17 other road names plus undecorated grey and kits models, featuring steel bodies, and Barbour gates, metal wheels, and die-cast metal trucks with rotating bearing cap. 1,250 pieces produced, 4 Kansas Series 4 Rail Trucks.

Z scale details and accessories

Assorted construction equipment Miniatures and examples rollers, yard, pots, industrial steam crane (1:87), and trucks. Also used 1:87. Build coverage. Materials.

Manufacturer listing

Atlas O, a Div. Kadee
100 Industrial Dr.
Washington, Kansas 66868-1000
(785) 325-2681
www.atlasrr.com

Bachmann Trains
1400 Lehigh Parkway N.
Allentown, PA 18109-9100
www.bachmanntrains.com
(610) 336-1441

Blue Ridge Railroad Co.
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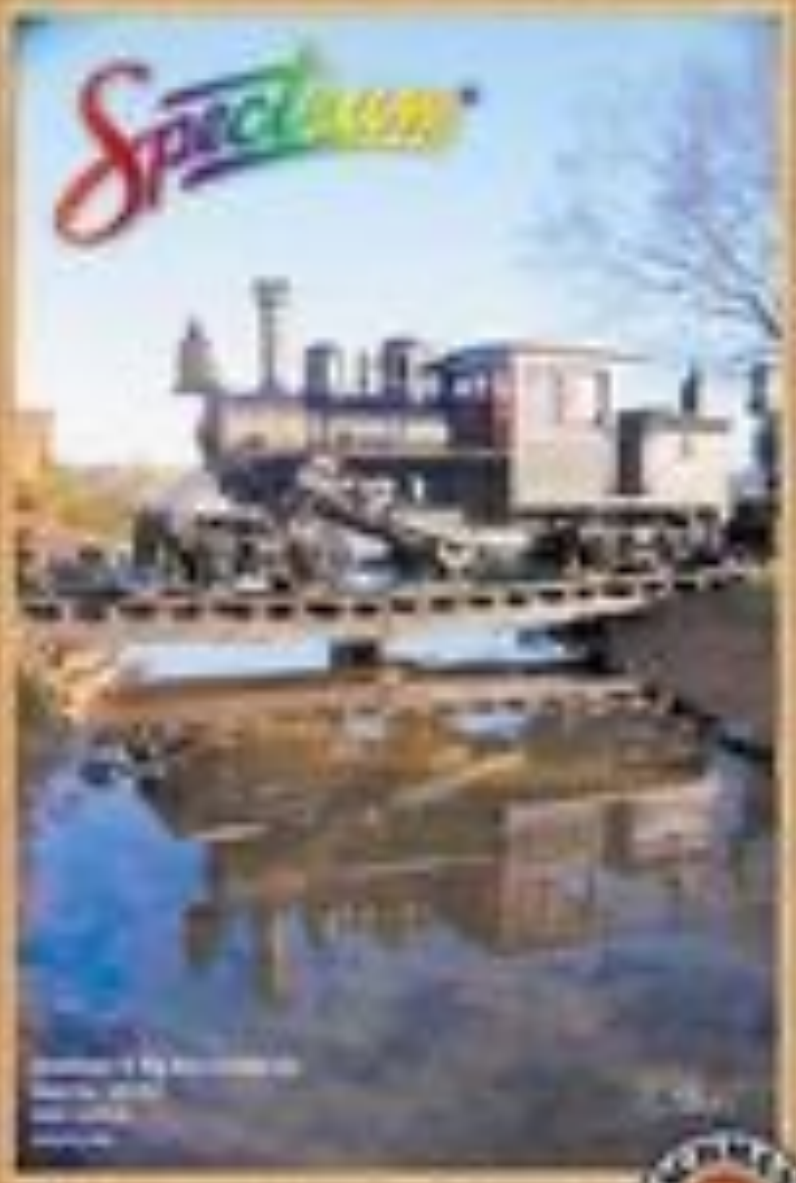

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A road map for train crews

A freight train conductor and long-time locals Richmond couple called the other day with a suggestion. Like many of us, he sometimes has trouble operating a phone he's now had for the first time.

"It would help," he said, "if we could create a list of track-level names we [illegible]."

For Location Assistance Control (LAC) codes were developed in the 1970s by the railroads. Typically a dozen [illegible] were developed about the same time by other railroads.

In general, the locals contain simple maps showing the track by use of card color. Each card has a unique [illegible] number.

For example, a freight car of interest might be coded [illegible]. The first numbers in the sequence indicate the destination town or road; the [illegible] are the track, and the final number is the location on [illegible].

By reading the car's destination code from data sheets for and searching the number's on their track diagram book, a yard worker usually knows in an out the car [illegible] Location 9 in the [illegible]. Track 4, in this example, is the [illegible] and [illegible] the [illegible] and [illegible] job.

Nearly all railroads currently use similar numbering schemes, but not [illegible] for different names. Union Pacific uses "[illegible]" Union Pacific Railroad Company [illegible] Kansas [illegible] Southern [illegible] "MPLC" Illinois Central Railroad [illegible] Kansas [illegible] Southern [illegible]

This view at [illegible] local knows where to spot their cars mainly as a numbering system keyed to a book of track diagrams, which shows the town, track, and location on the main. [illegible] main where each car should be placed. [illegible]

Back in the day, [illegible] railroads employed many to train and [illegible] conductor, a shipper talked to the friendly local freight agent when he needed a car delivered. The friendly agent provided the customer with a switch, making sure the right sort of car was ordered and that the train crew understood where to put the car.

The days of the local freight agent are pretty much over. If you want to ship by rail these days, chances are you'll need to call a 800 customer service center and talk to a person who's never met you and [illegible] nothing about your operation. Yet the car you ordered will still be spotted where you wanted, thanks to the numbering system and track diagram book.

No matter the name, the codes make life a lot easier for train crews and conductors alike.

Not easier for [illegible] railroads as well. Most of us could find our [illegible] faster on [illegible] than we could [illegible] Even the most [illegible] freight train is [illegible] over the railroading job. Locals [illegible] the [illegible] space, and less [illegible] on the warehouse docks.

Registering the cards and adding your [illegible] smooth a lot of [illegible]. Although the codes

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Information Desk

General Electric's U18B was more than five feet shorter than the GP's 4-8-2. The photographer notes that Seaboard Coast Line's cabs barely fits on the install. The little locomotive was a decent, but not overwhelming, success. A lower-profile model has never been made. William D. Middleton photo

Can you provide some information on the General Electric U18B? I have read books on Western Pacific locomotives (Standard 4-8-2) and diesel locomotives. The first W. Texas–Kaleidoscope 1-800. The U-18B is not listed in either book. How many U18Bs did GE make? Are they all B-B? How many or not may come in 2-4, two-axle models? Which railroads purchased them?

Michael Del Vecchio
Alta Vendata, N.M.

Both of the books you cited are excellent references, but the U18B was produced between March 1971 and October 1972, which made the locomotive in the gap between the pre-1972 locomotives covered in the Pico 10 Year book and the 1972 and up locomotives covered in the Pico 10 Year book. Both books are out of print, but you may come on the Pico Used.

The U18B is covered in a short addendum in the Contemporary Diesel Roster Guide, Second Edition. Manufacturer's data lists the U18B as having 1,800 hp. Locomotives in the domestic market and 18 U18Bs for Mexico. All the Mexican units ran B-B models. At least three Western Pacific U18Bs were made in Electro-Motive Division GP major models.

The U18B is classified as a high road switcher, meaning they are

General Electric's U18B was more than five feet shorter than the GP's 4-8-2. The photographer notes that Seaboard Coast Line's cabs barely fits on the install. The little locomotive was a decent, but not overwhelming, success. A lower-profile model has never been made. William D. Middleton photo

locomotive has the lower cab nose of a road switcher but the relatively low-horsepower engine of a switcher. The designation is a bit of a misnomer as this locomotive, although it would not be unusual, GE never built a true 1,800 hp switcher engine.

Lionel Leathers Louis A. Marre and Fred Prokopwitz write that the U18B was Lionel's model introduced for the same market as [1800-] GP7's at 1,800 hp locomotive they said the same diesel engine found in GE's U23B's. Actually, both the U18B and GP7's were designed to use components from each of locomotives, a manufacturing option for railroads.

In the end neither locomotive sold as large numbers. Presumably most railroads had an need for a new, low-horsepower locomotive when their existing fleet of GP7's or GP9's could do the same work.

The U18B was purchased by the Penn Central, Kansas Railroad & Western, Rutland's & Western, Seaboard Coast Line, and Texas Mexican.

An interesting model of the U18B has ever been produced. As an article on the topic, Bill's Iowa & Model Railroads, Ken Rice explained how he made a U18B by extensively reshaping an MP15 cab between U18B — [...]

Send your questions and comments concerning or information that model Railroader Magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail [email]. We regret we can't answer all the questions we receive.

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Build this handy sorting tray to handle small parts

After you find the easiest way to do the job of sorting small parts, you'll be tempted to use it for all kinds of projects. Here, we're using the tray to sort the parts for a set of drawer pulls.

Here's a basic sorting tray that makes it easy to find small parts stored in a container. It's a handy shop project that takes a scrap of plywood and a few pieces of hardwood.

The tray consists of a plywood base with a pair of hardwood cleats that keep the tray from sliding around on the workbench. After you've cut the tray to size, you'll add a lip around the edges to keep parts from falling off the workbench. Then, you'll cut a series of grooves in the tray to create the compartments for sorting the parts.

Cut the tray to size. The first step is to cut the plywood base to size. I used a piece of 1/4" thick plywood, but you could also use 1/2" thick stock. Then, cut the cleats to size from 3/4" thick stock. Finally, cut the lip to size from 1/2" thick stock.

Add the cleats. The cleats are glued to the underside of the tray to keep it from sliding around on the workbench. Before you glue the cleats in place, you'll need to cut a groove in each one to accept the tray. To do this, I used a dado blade in the table saw. Then, I glued the cleats in place.

Add the lip. The lip is glued to the front edge of the tray. It's important to keep the lip flush with the sides of the tray. Then, you can clamp the tray to the workbench and glue the lip in place.

Cut the grooves. The grooves in the tray are cut with a dado blade in the table saw. The depth of the grooves is set to 1/2". The width of the grooves is set to 1/4". Then, you can cut the grooves in the tray.

Finish the tray. After the glue has dried, you can sand the tray smooth. Then, you can apply a finish to the tray. I used a clear polyurethane finish.

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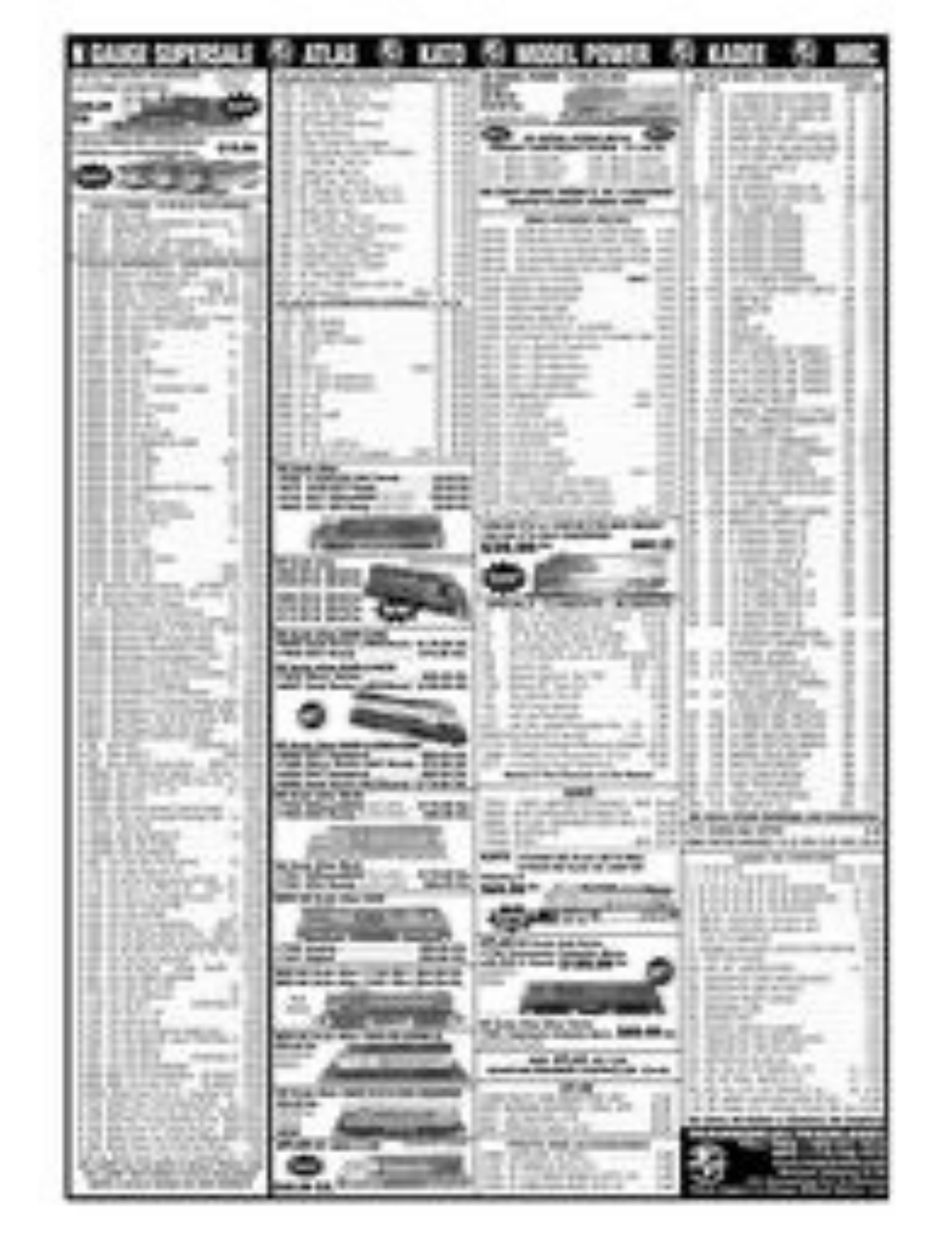

Easy and versatile benchwork

When I set out to build my first Yeoward K class 0-6-0 tank locomotive I didn't think it was a complex project, known for the usual jobs, such as the aspirations, until it rested the rail fixings on the over-engineered. (For the story of the engine and track plan see the forthcoming book *Yeoward Locomotives*.) Because no-one quoting inside no-one's it made the layout portable, building it on a 72" wide bolt-on work-bench and mounting the metro plan units on easy-access folding table. (This 24" x 48" construction had its own support leg.)

Since its portable design also folds beyond underneath dimensions, simple framework that does a still outstanding considerably more practical of space because of digging time (the 084 is still like three times 5.5 more demanding a lot. I should myself constantly expanding the N as the train

Before I could begin adding on to the Yeoward, however, I needed to make the existing layout work better in an overriding more understood. The folding table had to go. Further, along as it crashed time, using the same standard construction techniques I had. I to use comfy assemble for to fold-out no main point to main centre of portable and permanent former designs.

The 'L' baby set base

There are a number of ways to build benchwork for a model railway and books such as Jeff Wilson's *Basic Model Railroad Benchwork* are a great source for getting started.

I used a variation on the L-girder theme, developed by former Model Railroader editor Linn Westcott in the 1980s. An L-girder is made from two pieces of lumber, usually 1 x 3 in. flange up/over and screwed on top of a 1 x 6 in. or 1 x 8 in. forming an L-shaped beam. The ease-to-build benchwork method can support a great deal of weight and is useful in a number of benchwork designs. It uses less lumber, yet is strong and provides a number of options for joining other layouts to it.

Since I was using fabric and doors for the main portions of the layout, I chose to build a system of cup-joining bases and connecting bases using L-girder beams. The illustration shows where these cables and bases are located on my layout.

The cable between 4 and 5 was easy-standing and include a shelf for storage. These electronics sections support the tubing and other components of the layout and use the 1 x 4 L-girder design as a screw-down on which to mount it.

The connecting bases shown in and 1 are also made with a variation. These support the layout layout and more than just the fabric cup doors. The bases are added to the support cables with 1" L-bracket nuts and using nuts, as it need be. The layout benchwork can be quickly disassembled and put back together.

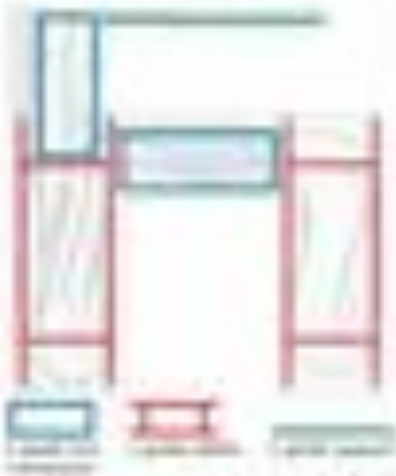

Illustration by Jay Smith

The combination of support cables and connecting bases form a solid benchwork system, with the versatility of easily adding new sections to the existing layout.

Shop T Table construction

My benchtop support tables are made from 1 x 2 and 1 x 4 clear kiln-dried pine lumber. Though clear pine is more expensive, it's a high-quality construction material, making it easier to build straight, solid benchtops. The dimensions shown in the illustration are for supporting 60" to 96" lumber, plus interior blocks that you can change the measurements to accommodate whatever size or size layout you want.

I like all the components in subassemblies and most of the basic carpet parts are glued and screwed together. Be sure to not glue cross for all screws to avoid splitting the wood. The tops (1 panel tops), shelf and aprons are attached to each other using 3" carriage bolts with washers and wing nuts.

The L aprons are made using 1 x 2s for the flange and 1 x 3s for the tapers. If you're building taller longer than 6 feet, you'll want to use 1 x 4s or larger for this bracing.

The leg braces are made from 1 x 2s and bolted to the table assembly with 3" carriage bolts. The spacer block allows a flush fit between the leg brace and the L girder, as shown in the photo.

The adjustable furniture feet, found at most hardware stores, come with a threaded rod. Drill the appropriate size hole, tap in the socket using a hammer, and screw in the foot.

Each table has its own storage shelf, used to brace the legs. The shelf is made with a 1 x 2 frame covered with a 1/4" plywood panel top. You could easily increase the shelf with removable panels to make the contents

The legs are bolt-wingnuts to L girders, except this brings the 1 x 4 size on the top edge of the 1 x 2. My layout legs are 27" high (giving the workbench top a nominal 34" height of 34"), but you may want them taller, depending on how high you want your layout. Each pair of legs is joined by a 1 x 3 brace.

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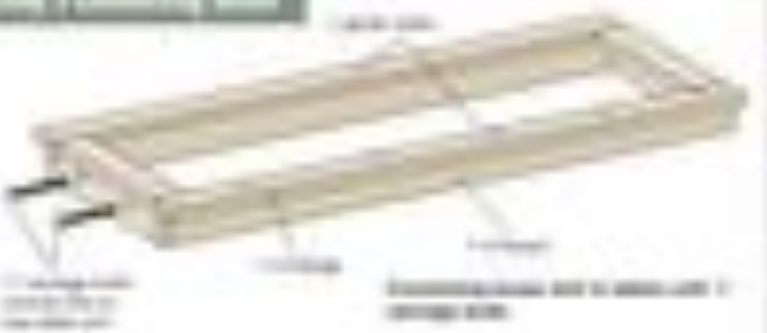

Connecting tenons and rail to tables with 1" carriage bolts

Through-bedrow mock dovetails are easy to work with, their rectangular shapes and sizes are nonessential binding. Because of this, I used dowels for only the main pullback in the layout. For the 4 crossbeam joints, I built over-size connectors fastened down 1 x 2s covering them with a 1" plywood top.

I built these sections on 2 tables, one shown in the illustration. The boxes built only the table units, supporting the connecting layout sections and forming up the entire benchwork structure. The photo shows a connector box temporarily clamped in place between the two layout tables.

Two tenons from the layout that don't connect to another table, you can add one or more leg spacers when they might used for the same purpose. I used this technique to support the long rail section shown in the step 3 illustration. This rail section will eventually run over into another support table.

Step 2 Planning Layout sections

Once the benchwork is assembled and leveled, you can attach the layout to it. For the trained layout sections, simply run screws through the L-girder flanges into the frame, as shown in the photo.

Working with hollow core doors is a bit trickier. These have a solid wood frame, approximately 1" wide, that runs around the perimeter of the door. The center of the layout sections, a narrow, usually contains a web of cardboard spacers to support the thin plywood exterior. There fore, you really can't run screws into the center of the door and expect them to hold well.

For the hollow core door layout sections, I ran screws through the flanges near the ends, going them into the doors frame. I then carefully ran several more screws through the thin center of the door just to hold it in place. With this, your layout should now be firmly supported.

HOBBYSHOP COUNTER

Photoscript photo of a WAP (5AC) by Brian Morris. The model was also be one of the first offerings in the new Dapol 00 line.

Dapol Launches New "Lower 00" Injection-Molded Line

Diamond Models, long known as an exceptionally detailed brass models, is becoming a new one of injection-molded

00 (HO) models under the Dapol 00 label line this year. Announcing in their line, the manufacturer warns, Diamond said its initial offerings will include the GE Evolution Series, C30-8(ES44C4), and the GP Trunk Ops Express.

The GE Evolution Series models will include WAP 5 (5AC) & GP 5 (5AC). Each models will include the ES44C4's present for GP series. Each are the initial offerings, beyond which many other modifications are planned.

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Tower 55 products are designed based on extensive research, on-site inspections and the expertise of the company's team of knowledgeable rail enthusiasts. HO/S and Proto 1/2-scale models are rendered with attention to accuracy and authenticity. All models come equipped with the Digitrax DH and SC2 technology making them ready to enjoy with no additional components required.

The models are handcrafted for unmatched instantaneous. Always for easy-to-use and ... Tower 55 products will be ... above. Any variations of the ... Summit, from Silver Key A-10 in Cincinnati.

"In addition to our dedication to accuracy and detailing," said Walsh, "our long-standing relationships with North American rail road hunter and Tower 55 goes. We're able to bring our customers the opportunities they're looking for models and our ability to go on-site in the design phase means our accuracy is unmatched."

Walsh said the first products are expected late this year. For more information, ... Tower 55 Products' Web ... at www.tower55products.com.

Kato Announces HOPE Superliner Passenger Cars & Amerillo Baggage Car Set in N

Kato ... to ... delivery of its ... HO ... locomotive. The

Fran and Miles Hale on
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connectors for the models being built during that time.

Some of these designs were set aside for future development when the model railroad industry developed new standards and technology.

Over the years the company has introduced offset couplers, long and short shank couplers, special application couplers, "scale" couplers, and recently a smaller draft type of coupler.

Kadee's latest release is the No. 148 "Whisker" coupler with a built-in wire centering spring that makes the coupler a simple and clean "original" design.

This wireless spring design is one new to Kadee. It was developed in the late 1980s, but was set aside for future development, when new materials became available to make the design reliable enough to meet the company's quality standards.

The knuckle and coupler head are the same as the Kadee standard No. 5. Kadee plans a "scale" version for this design as well.

The Whisker coupler is all metal, including the wire spring.

Kadee says the new is high tech and advanced couplers, and will not take a set when in a compressed position for any length of time.

The No. 148 is a centered, medium-weight coupler that will ship only under "standard" draft gear boxes. It is designed to match the height and height of the popular No. 5 coupler.

As with other Kadee couplers, it has both "straight-blade" and "delayed action" operation and will function with all of Kadee's HO permanent and electromagnetic uncouplers.

The Whisker centering spring is a thin wire protruding at a "V" angle forward from the pocketing hole at the end of the shank. Because the wire spring is not, the two shanks do make and caution must be taken when handling the coupler.

The couplers are sold in packages of two pairs with draft gear boxes and have a suggested retail price of $4.75.

Model Rail Scenes 48 Rising Co. Issue

Model Rail Scenes has announced the release of its latest HO scale billboard, fencing and landscaping kit scale.

The scene kit contains three structures including a pre-assembled "billboard"

Kadee Releases Three More HO Steel Liberties

Athearn Announces 100th Micro Brewery Car in N

Intermountain Announces Fall Release of N-Scale F-3 and F-7 units

Walthers' New HO-Scale 50' Double-Door Offset-Sash Boxcar Variety

New HO-Scale Pullman-Standard 10-Roomette/6-Double Bedroom Sleeper Variety Features Separate Vents

by Doug Geiger, MMR

Kansas City Southern Lines

The Vista-Dome North Coast Limited

The Model Railroader's Guide to Freight Cars

BECOME YOUR OWN BUILDER
RATIO

RAILWAY MODELLER

All in the mind

Railway modelling is an activity many other hobbies or due imagination plays a significant role

Scale and authority

Practical – an advocacy ?

Welcome aboard

Market Harborough

A Leicestershire junction station updated

KEVIN AMBERY presents this N gauge vision of the station as it theoretically was had not Beeching's axe fallen on it.

Why Market Harborough?

The layout

'Severn'

of the Shropshire & Montgomeryshire Railway

Return to Ardlui

West Highland Wanderings - 7

John Yuill revisits a favourite location for (the series ten years after its first appearance in 1992)

Gresley coaches

Whatever we turn to weather

Peter Waterman Limited was inspired by these recent Hornby OO products.

A Gresley buffet

For the 'blue & grey Mk 1' era

Mike Wright turned out some modifications to a Hornby third-scale ex-LNER catering vehicle

With a lookalike standing next to the lead run mostly to make the coupling process fun for kid #1 wants to stop down the locker room wearing its mask.

Maximum Operation

With Minimum Paperwork

By Jim Hayes

Are

you still searching for just the right operations system for your model railroad? Have you grown tired of little pieces of paper falling about the room and the time it takes to set up for just one operating session? Have the new persons on many of your crews couldn't learn to work together? Are you tired of spending more time at your computer creating paperwork and more at your favorite hobby? Then you're beginning to feel that as much you are spending more time on paperwork than actually operating your railroad?

My experiment I know of very few model railroads who have implemented operations more simple to, and yet about, details of their railroad yet do anything to speed it. For years, those of us interested in realistic operation have faced the challenge of creating a system that simulates the prototype without becoming so so become bogged down in paperwork. The use of carded thumbtacks to indicate switch stops on the car works for years, but opens up the question of centralized. Computer programs of various sorts have proven very useful, but have added to the paperwork and often require more computing days. A popular system used by many clubs involves a card with a train number printed in small a circle on an addressed square of paper with shipping directions. Experience with this has also shown that the small pieces are easily dropped and the cards can very together in the system. Furthermore, it can become very time consuming finding or creating just the right train number combination for each car and filling all of these pockets in preparation for the next session.

One model-train operating group has experimented with a system that I have used for the Paco Valley which uses a minimum of paperwork once it is up and running. It can be adapted to any size railroad and, perhaps most important, gives the feeling of knowledge car next destination, including an automatic way to ship traffic fluctuation.

In addition, several cars have are available, depending on how much volume

Bill (right) Art (r) conductor, looks over his waybills and clearance card while the train's power is moved from the west end that track on track 2 in the Peoria yard.

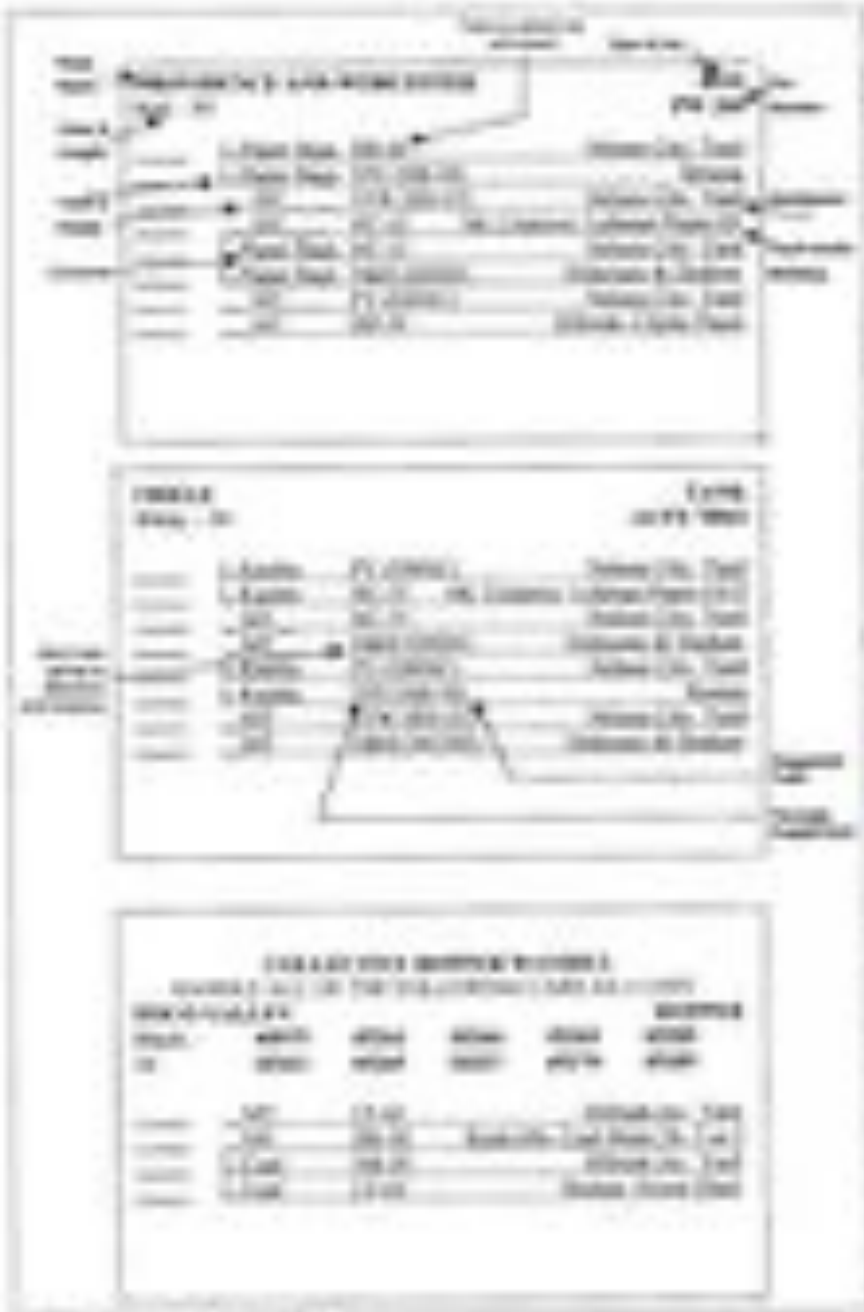

Figure 1. Examples of models.

for the cars that have been put away, in the past, a compartment is provided for each track. Except for placing the seatbelt in its proper slot, in keeping the seatbelt for passage from the top to the rear center pole, the crew has no responsibility. The only person who has to use a pencil is the yardmaster on my clerk to check the cars and record on the waybills that have just arrived in the yard. After the cars are taken inventory, the yardmaster will pull an arrival track and switch out the cars according to their train destinations. When it is time for a train to leave the yardmaster will turn on a caboose, and attach the appropriate clamp to the waybills. No paper clips, no staples, no consumer commodity, and no small pieces of paper to lose. Furthermore, the train does not have to spend hours figuring out which cars to move and where to send them when setting up for each session.

Car Card Preparation

The only expenditure in preparation I have between sessions is to check the next line of those carefully which have been spotted at various industries on the railroad on shipping tracks. At the same time, I will audit or visually open hat cars to determine if they were to a shipping track recently become short restrictor to protect cars and to move on the waybill reflects this. When some new object to the perishability it determi- pushed out. Unless since it happens over two different sessions, I can anticipate another shipment a given car is to be picked up from an industry track by

DOCO VALLEY RAILROAD

FROM: Sandy Cove Freight YARD 2 REPORT #: 1994

AAR CAR TYPE: XM 6 CAR ORDER: 1994 Southbound Caboose Car Without Cupola

- Place empty flat cars in track number 6 west.
- Place loads in the Coastal Wood Co. MMM-1 Mill and Lumber Industry.
  - Mills #1 & #2 Saws, and Warehouse and Shipping #1 Planers, and #2 Planers Sheds, Northern Valley.
- Pick cars in tracks 1 and 2.
  - Cross Seaport Line at West End and Via Sidings to Coastal Wood Co. Mill Lumber Industry.
- Add cars to Caboose via Crossover & West 6 and return to Mill Via Seaport Line.

Figure 2. Example of Clearance Card

crossing the river line down if the load has not inspected the crew and consume that the car is not ready to pick up, but at each turn the "re-card" just by looking the Clearance Cards for the various trains are now used over again. These cards direct the crew as to the train route, trains and other trains, work to be performed along the way, etc. It is read order needs to be changed or any other special circumstance presents itself, the dispatcher can handle it during the session. Unless I've been doing photography working on someone or something else unusual happens to cause things to be in strange places, it generally only takes a few minutes to set up for the next session.

Occasionally a client of ours places a session begins and tells me that more cars are going to be sent to a given industry than its siding can handle. When this happens, I can either remove the extra car or cars from the track "inside" operating with their respective waybills, or give the local crew an extra challenge by sending out two cars for a siding that will fund only one. The crew will then have the car (and waybill) unless return it a nearby siding or it can be

Passing under the signal bridge in front of the Jackson City yard office, Alco S1 slowly works its way onto the down line. An SD-24 waits on the lead for clearance into the engine terminal. The Chamberlin, hard yellow can be seen at the center of the photo, while the turntable and steam load area are visible on the left.

moved when the first car is loaded or accepted at the next day for the crew must be sure to add the departure where they left it, so as not to, accidentally to put it. Of course, if a car is removed from the layout for any reason, one must remember to give notice to switch.

Operating Sessions

In the new the system works on the Doco Valley and the rules of the H. As they perform their duties. The is a switchboard height, which runs from Chamberlin Yard in Nelson City to Jefferson Junction, performing local switching duties at various points along the way. It can be run with a crew of two person rules.

After receiving their Clearance Card from the dispatcher (see figure 2), and finishing their assigned duties, they are told by the Chamberlin yardmaster that their train, with the caboose already coupled on, is on track 2. While the engineer checks the power from the engine terminal to couple to the train, the conductor studies the card of train info enclosed with a handy reading lamp. It, which has been given to him by the yardmaster. Figure 2 gives the content of our train of order from the locomotive bell. Once they have the waybills, the train crew would not receive such a list on years. I have included it here only for the convenience of the reader.)

The Clearance Card tells them that stop at Mill Crossing and the yardmaster has instructed the left. Crossing can at the end of the train. This is due to the fact that the track where these cars will be dropped is a mixing point siding. After reading train #24 at Jefferson Jct. to Nelson City mail and express train, the power runs around to train and coupling to the rear of the caboose, can out the three cars. These cars will be placed later the evening to the overnight job. Crossing behind are three more set on westbound cars in

After ADU departure, NJ-21's engineer, Bill McGlaughlin, receives permission from the dispatcher and runs his power around the train to couple on the west end

...ing lot. Coming siding, the crew ha... pick-up. NJ-21 is eighteen cars ... wagon, and have another pickup whe... almost tomorrow morning, as it left ... late) with it all the fifteen (!) cars left ... tonight's switch job.)

After reassembling the train, it starts its trip to Hillside Junction, where the NY interchanges with the Erie Lackawanna. The first two cars in the train are to be dropped here in the yard for later pickup by ADU, the Erie Lackawanna interchange, which runs between the Meadville staging track and Hillside Junction. In addition, two supplies are found in the Hillside Junction yard packed for two flat cars headed for Jefferson Junction (see figure 3). Since there is no yard master in the small Hillside Junction, it is the responsibility of the road crews entering there to look out for ...ying in Jefferson Junction staging track, the supplies unloaded together and destined as NJ-21, are placed in the proper places and the crew goes off duty.

In between operating sessions, I will check the train line down on each of these supplies as explained above, and make changes in open-top cars, loading or emptying them as necessary.

...One exception to having a loaded hopper car is what we call the "collection supply," which we use for cuts of cars of interest to the core destinations. As an example, a group of ten hoppers whose ultimate destination is Boston may be set out at Hillside for the middle Branch and a seven pack in Boston. There is no point in handling the supplies which one across the

NS101 (nearly dead) and Express truck #26 in dirt. (Lindsay)

The brakeman prepares to make a run between the covered hopper and the Atlantic Coastal Express.

Using the branch line as a switching lead, NS101 passes tanks onto the two track in the remote turnaround yard. After backing them onto the track, the crew will continue west toward the staging yard in anticipation

Dispatcher Ken Barbon prepares to set up a moon between NS101 and #26 in dirt. (Lindsay) The chart gives the dispatcher an overview of where things running on the railroad

A single Caterpillar model 14H road grader occupies this HTTK flat car. This grader is equipped with a rear mounted ripper; similar to the Bunyon Hill loads loaded.

ROAD GRADER LOADS

By Tom Noonan

One of the most distinctive road maintenance machines in the world is the motor grader. The motor grader was invented by the Russell Grading Manufacturing Company of Minneapolis in 1919, and was a natural offshoot of the company's horse and tractor drawn devices, some of which remained in use until the middle of the 20th century. The first model, dubbed the Russell Motor Patrol No. 1, was powered by a six-cylinder engine and built by Mitsubishi. Motor Patrol 2 through 6 followed over the next 9 years, using power units from various manufacturers including Caterpillar. In 1928 Caterpillar, recognizing the importance of the motor grader market in the developing world of automobiles and paved roads, purchased the Russell Company. By 1931 Caterpillar had redesigned the motor grader, moving the engine to the rear and equipping it with rubber tires instead of metal wheels on crawler tracks. The basic design concept of the Auto Patrol, as it is called the later configuration, has remained the standard grader design ever since.

Over the years other manufacturers entered into competition with the motor grader business in North America, including Mitsubishi, Austin-Western, Champion, Galion, and John Deere. The purchaser was Frisbie Brothers, Civil Engineers. Civil Engineers acquired Austin-Western, Hass bought and then sold Champion, and Dresser acquired the Galion line, which eventually became part of Komatsu. Despite all of these corporate identity changes, the grader builder no. 1 position has remained unchanged since 1931. Caterpillar has consistently held at least a long term 2 property maintained industry of all manufacturers combined, found in use across North America.

Graders, like other heavy machinery, come in various sizes. The smallest Caterpillar grader, the Model 12, is 22 feet long, weighs 23 tons, and has a 12 foot wide blade (the width is industry standard). The largest Cat model, the 16H, is 34 feet long and weighs in at 83 tons, with a 24 foot blade. It is designed for use in the mining industry.

The big speed of motor graders is under 30 mph, so they usually do not travel long distances under their own power. In a week, graders on their way to new owners or job sites often travel by rail, making them an economical choice for long hauls.

Rear HTTX flat car is carrying a pair of Cat model motor graders. Rear graders can fit on the car because they are not equipped with rear mounted rippers. Graders are relatively light machines and the car's 40 ton capacity easily accepts two of them.

Model graders have many variations. In some cases, as what is the big deal about many cars? The glad, they are. In the grader, in 140 motor, one model, with an 8 foot on a body-mount flat car, is a generic design and part is designed to work functions more advanced, model is a result of that industry economy, and represents a mid-point on

The blocking used under the blade and against the wheels, as well as the chains used to hold the trailer to the car deck, are clearly visible in this close-up view of the Cat 160H grader loads.

With all of their crew on the ground, this pair of Champion graders looks like they could go to work right away! Graders are multipurpose machines and are frequently used for snow removal on rural roads, sometimes they are equipped with large front-mounted V-plows in addition to their blades. Ron Berg shot this photo in Hardwick, Ontario, in 1984.

Fully prototype. There are several plastic models of European prototypes (Corgi, Vitesse, Minichamps, Norscot, Solido, and a few others), but the Norscot model is the only one I've seen in 1:50 scale that includes a prototypical blade, ripper, rear body, paint scheme, and cab interior. The Norscot model comes the closest to the real thing, especially when you consider it is available for under $20. Dual- and 3-axle models have just been released, and I'm looking forward to getting a few of them. Unfortunately, the 12-axle model is not available for some time, but the company is working hard on it and it should be out soon.

The availability of the Motorart 160H grader in 1:50 scale means I could possibly build a grader load for which I had several prototype photos, taken in Canterbury, Britain. Caterpillar graders are manufactured in Decatur, Illinois. Graders loaded west from Decatur are loaded on the Illinois Central by heavy haul for Burlington's Chicago to Galesburg routes, they are then transported on the plains for movement west. They are usually carried on rail haul 910 flat cars designed for hauling machinery.

A 910 machinery flatcar in HO scale is available from Intermountain, retooled with 12'10" spacing trucks. 12'10" stacking trucks designate cars designed for hauling agricultural machinery. Some of the 910 cars are identical to the 917A cars designed for hauling construction machinery, the only difference being the strength of the tie down chains used to hold down the machinery, a difference that would not be noticeable in HO scale. I chose the Intermountain car to haul my grader as I didn't think of a before I saw the photos. A 6-car 910 repainting shares can easily be changed to 917A trucks by detailing each flat 12 with an A from a 110 decal set.

I began by assembling the car according to the car kit's instructions. The Intermountain car is also available ready-to-run. The wood deck was weathered with India ink diluted with rubbing alcohol, and grimy black paint was sprayed on the underside and trucks.

When lowering the grader, some preliminary work needed to be done. Looking at the prototype photos, you can see that pieces of Cat Limited have been laid on the car floor under the blade, and a piece of this protected under the teeth of the ripper on the rear of the grader to exclude dirt, the Motorart grader was positioned on the deck so that the hydraulic cylinders that raise the blade were to the right (ahead) a set of plate pockets at the centre of the car. Scale 2x6 and 4x6 lumber was cut and laid on the car deck under the blade and ripper, then glued in place with cyanoacrylate glue.

The grader was then lowered and the blade and ripper height adjusted, so they sat squarely on the lumber. The 12 foot grader tends was also raised up to sit between the side load chocks of the car. Once it was satisfied with the position of the blade and blade, I put a drop of cyanoacrylate glue on each hinge point to prevent further movement. A small drop of glue was also applied to the inside of the front wheels, rear wheels, and tandem assembly and the grader activity placed on a flat surface until the glue set up, fixing the positions of the wheels. The tandem hinge pins on the model are unpainted steel, and could not have been otherwise this scale job. The grader's attachments were chocked to relatively 1/4 of Cat "new" yellow paint on each pin.

With initial preliminary activities done, the grader was loaded on the car

as opposed to the numerous chains and blocks used on the new CAT grader), this trailer weighs-in around to a payload that can work just a few chains. A friendly rollmaster confirmed that the grader belonged to the railroad and was being moved from one foreman to another as the need in yard maintenance

The rear-mounted ripper shank etc were actions damage to the metal deck of a flat car, to prevent that damage, a dell timber is placed under the work of the ripper

South Pimlico

Passports not required

Bluebell Railway stations

LBSCR structures drawn and described

Rear Elevations

SHEFFIELD PARK STATION — ENTRANCE

PLATFORM ELEVATION

PRESTFIELD PARK

End

The Ditton chronicles

Part 3 – Ditton Health

Jennie Hamilton tells how the medical NCM report was completed the week with a short section

Darrowby

How to be inspired on Sunday night

Sally Abraham imagineers a brand-new winning a North Yorkshire market town.

Dirty work at Compton Down

You wouldn't want to spend a holiday there...

...unless of course your name was **PETER JONES**

Words by Jonathan Ross. Photos: Peter Jones. All Rights Reserved.

Above: Jon Hawkins pumps out decay at the Dead Zone Festival, which took the 100 mile camping festival out to the picturesque but dirty and run-down Compton Down.

Photographer Jon Hawkins

A Boeing 737 fuselage rides a special rail car on its way to Boeing's factory, Washington's plant for final assembly. Note the supplementary air ride load cell of the car designed to protect the fuselage most. Robin Broadbent photo.

Modelling a

BOEING 737 FUSELAGE TRANSPORT

By Steve Gibson

We can see the old Kokai Kentucky bascule bridge #4 from our living room window, and I have lots of exciting RR trains go by. Like most photo-mad kids, most of the trains we see are diesels, each contained inside or perhaps an entire train of grain hoppers, creeping ahead for days on an endless heading back to the Midwest.

But sometimes we get to see more very interesting cargo, and the Seattle has it's fair share of Boeing 737 fuselages on their way from Wichita, Kansas to Renton, Washington for final assembly. Sometimes it will be just one or two of these cylinders, usually accompanied by a caboose, but they're still allowed to protection rail dash up moves, sometimes many will be a variety of other cars on the train as well.

The tail assembly of the 737 passenger jet is the end of the fuselage can on a special spacer that can a couple behind it. The tube structure was constructed from stainless steel, painted, assembled, and labeled with custom decals. Steve Gibson photo.

I decided that my own layout would not be complete without one of these rail cars, so I undertook a project to build my own. Now I'm no master railroader — and I don't have any insight into what all the coupled cars behind it are for — but with a few digital photographs, some patience, and a number of false starts, I think I came up with a decent looking model that captures the essence of the real thing. And if you're willing to accept a fairly wide clearance, as using a 40' flat car instead of a 40' flat car, you can create one of these yourself in a reasonable time and for a reasonable cost.

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This closeup shot shows the location where the wings are attached to the fuselage, and the mechanism that supports the weight of the fuselage on the A62-ton Aerolor Aerotransport wheels.

the nose and tail sections, although I left the holes for the wing assembly untouched. I also cut away the nose and made a flat disk end.

As they come from the factory, these fuselages are a greenish tan colour, and I really need to see photographs of the fuselages to believe that such a colour exists, and I know that I don't get quite the paint match right. I considered "good enough" by mixing some BN green with some, although a dose of Hull's blue-green is the truth. The green paint then did double duty as Aerolaser's plastic coverings over the door openings. The "plastic" was "held in place" by yellow drafter decals that Aerolaser don't have.

For the front set, I used three trimmed top cuts of Rally Hobbies, a fifty hobby

Above: This closeup of the wing area shows the wing mounts and the rear fuselage cradle. Narrow decal strips were used to simulate the tape around the door seals. Steve Ulrich photo.

The author's model of a Boeing 737 team consists of three cars – the 20-foot flat car carrying the fuselage, a green flat, and a flat car with a zero access hood. Aerolaser models were the starting point for all three cars. Steve Ulrich photo.

A second car unit, a shorter box, protects the rear of the fuselage, which overhangs the end of the 6th-face car carrying a resin aircraft plate.

Above: The Boeing 737 nose is an impressive sight, shunted in the background is the 6MW Bakula bridge over the prototype motorway.

Interior shots and I decided were used to construct the fuselage protection structure, which is glued already to any flat car model. The fuselage was then also built and rigorous. Some 10mm plastic

FONDULAC 50-FOOT X-POST BOX CARS AS SOO 17788 AND 18280 FROM MODELER'S CHOICE KITS

By Bob Hunt

500 LINE
500 LINE

DCS wiring tips

Adding MTH's control system to medium and large layouts

by Jamie Priddy | photos by the Priddy family

The MTH Block-to-Block Control System (B2B) is a powerful, versatile system that can be used to control a wide variety of accessories and operations. Most modern operations are controlled by computers, but the B2B system can be used to control accessories that are not computer controlled. Some of the more common uses for the B2B system are controlling crossing gates, signals, and animations.

This article will be the first in a series of articles that will explain how to use the B2B system. In this article, we will explain how to set up the B2B system on a medium or large layout. We will also explain how to use the B2B system to control accessories that are not computer controlled.

Introduction

The B2B system is a powerful, versatile system that can be used to control a wide variety of accessories and operations. Most modern operations are controlled by computers, but the B2B system can be used to control accessories that are not computer controlled. Some of the more common uses for the B2B system are controlling crossing gates, signals, and animations.

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Hardware and big examples

The B2B system is a powerful, versatile system that can be used to control a wide variety of accessories and operations. Most modern operations are controlled by computers, but the B2B system can be used to control accessories that are not computer controlled. Some of the more common uses for the B2B system are controlling crossing gates, signals, and animations.

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Adding B2B to existing layouts

The B2B system is a powerful, versatile system that can be used to control a wide variety of accessories and operations. Most modern operations are controlled by computers, but the B2B system can be used to control accessories that are not computer controlled. Some of the more common uses for the B2B system are controlling crossing gates, signals, and animations.

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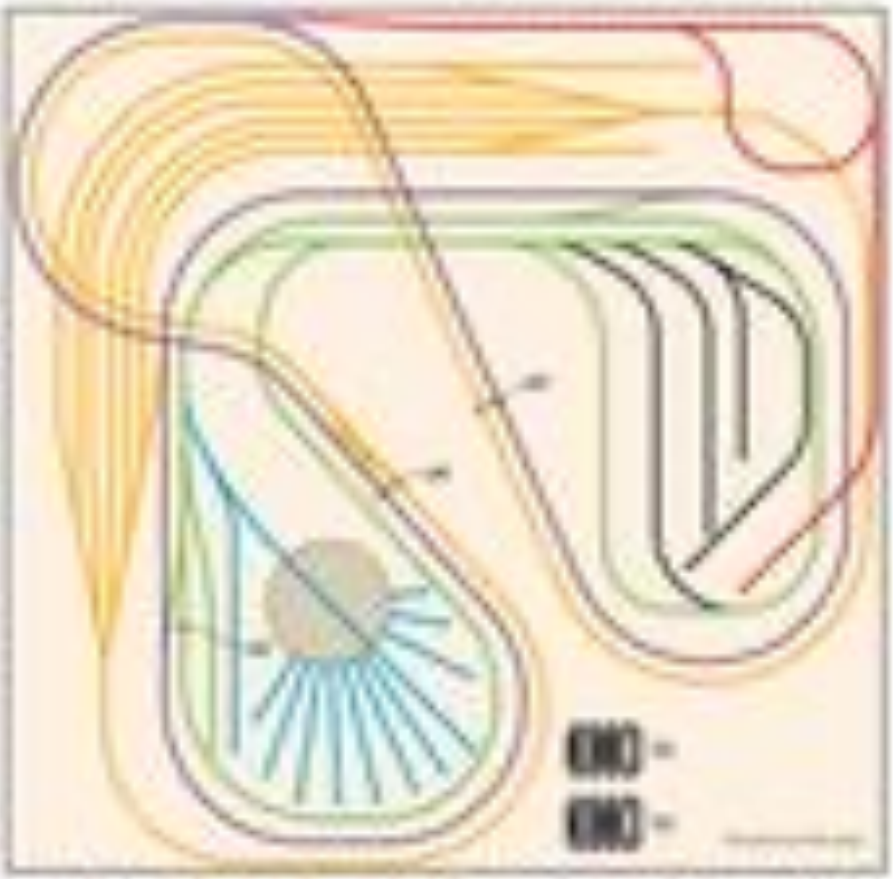
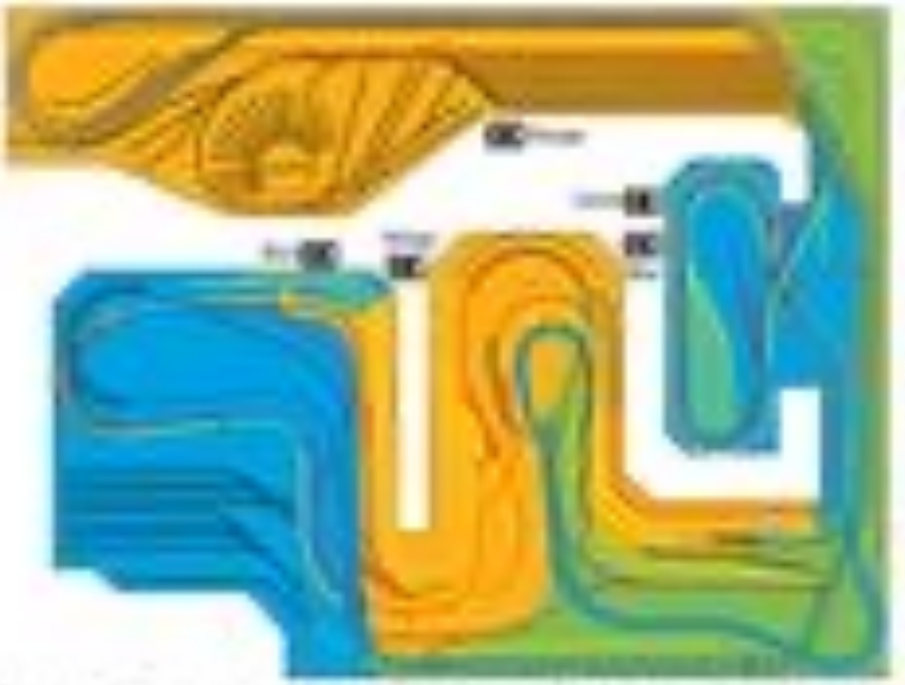
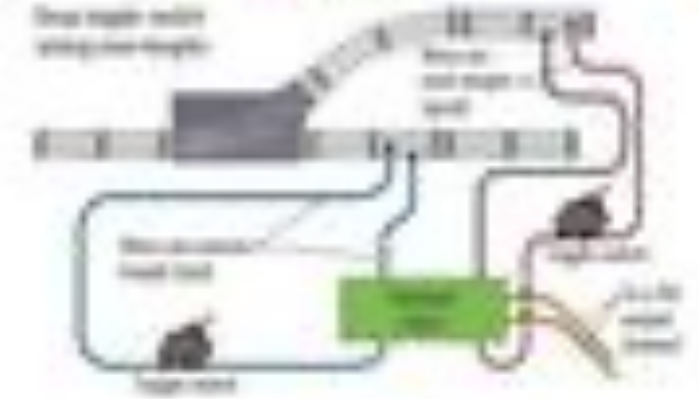


Above: In this 10-foot layout, a circuit at a "loop-type" scheme. Each circuit has a connection to an MTH output terminal. They track core improved signal transmission.



Trans-Lash's massive 4ft. by 6ft.-foot G gauge layout uses the regional swing approach. Each colored area is controlled by its own TIU.



The DCS signal model was when toggle switches do not create uneven lengths of wire, as shown on the top graphic. Balance is also beneficial at the terminal blocks.

[X] as new construction

Before designing a new [X] system, use it yourself for a while. Observe how you interact with it and what features you find most useful or frustrating. Then design a system that does exactly what you want it to do.

Each [X] contains two main components: a receiver and a transmitter. The receiver is usually powered by the host device, which will provide a voltage between 3 and 12 volts. The transmitter is usually powered by batteries, but can also be powered by the host device. Some [X] systems have separate transmitters and receivers, while others combine both functions in a single unit called a transceiver.

One of the most important decisions you'll make when designing your own [X] system is what kind of signal you want to use. Infrared is the most common, but it can be affected by ambient light and requires a clear line of sight between the transmitter and receiver. Radio frequency (RF) signals can travel through walls and don't require a clear line of sight, but they can be more susceptible to interference from other devices. Ultrasonic signals are another option, but they can be affected by temperature and humidity.

Once you've chosen your signal type, you'll need to select a modulation scheme. This is how you encode the data you want to send onto the signal. Common modulation schemes include amplitude modulation (AM), frequency modulation (FM), and pulse-width modulation (PWM). Each has its own advantages and disadvantages in terms of complexity, noise immunity, and power consumption.

You'll also need to choose a protocol for your [X] system. This is a set of rules that both the transmitter and receiver must follow in order to communicate with each other. You can use an existing protocol, such as IrDA for infrared communication, or you can create your own custom protocol. If you're creating your own protocol, you'll need to define things like the data rate, the packet format, and the error detection and correction scheme.

Finally, you'll need to design the hardware for your [X] system. This includes the transmitter and receiver circuits, as well as any antennas or optical components. You'll also need to choose a microcontroller to handle the encoding and decoding of the data. Many microcontrollers have built-in [X] peripherals that can simplify the design process.

Switches and toggle switches

When designing circuits to power [X] devices, it's important to consider both the voltage and current requirements of the device. Using a voltage that is too high can damage the device, while using a voltage that is too low may cause it to malfunction. Similarly, drawing too much current can overload the power supply and cause it to overheat or shut down.

To ensure that your [X] device receives the correct voltage and current, you may need to use voltage regulators or current-limiting resistors. These components help to maintain a stable power supply and protect the device from damage. When selecting components, be sure to consult the device's datasheet for its recommended operating conditions.

Another important consideration is the physical layout of your [X] circuit. Keep the traces that carry power and ground signals as short and wide as possible to minimize resistance and inductance. This will help to reduce noise and ensure that the device receives a clean power supply. Also, be sure to place decoupling capacitors close to the power pins of the device to filter out any high-frequency noise.

Finally, don't forget to test your [X] circuit thoroughly before deploying it in a real-world application. Use a multimeter to verify the voltage and current levels, and use an oscilloscope to check the signal integrity. Look for any signs of noise or distortion, and make adjustments to your design as needed. Testing is an essential part of the design process, and it can help you to avoid costly mistakes later on.

Test as you go with music

When you begin wiring your layout, power up within a single loop or segment at first to ensure that your DCC connections are working properly and that all Protothread 2.0 transmitter functions are working. Once everything is working, you'll want to test your receiver's performance under the various conditions it will encounter on the layout. Testing the receiver's ability to detect and decode the DCC signal in the presence of other electronic devices, such as motors, lights, and sound systems, is crucial to ensuring reliable operation.

There are many ways to test your DCC signal. One common method is to use a multimeter to measure the voltage between the rails and the track. However, this method only provides a rough estimate of the signal strength and doesn't tell you anything about the quality of the signal. A better approach is to use an oscilloscope to visualize the DCC waveform. This allows you to see the shape of the signal, including any distortions or noise that may be present. You can also use a dedicated DCC signal analyzer, which will provide you with detailed information about the signal's amplitude, frequency, and timing.

When testing your receiver, it's important to simulate a variety of real-world conditions. This includes operating the locomotive at different speeds, changing the direction of travel, and activating various functions, such as lights and sound. You should also test the receiver's ability to maintain a stable connection with the command station while the locomotive is moving around the layout. Pay close attention to any areas where the signal may be weak or intermittent, such as near turnouts or in areas with a lot of metal.

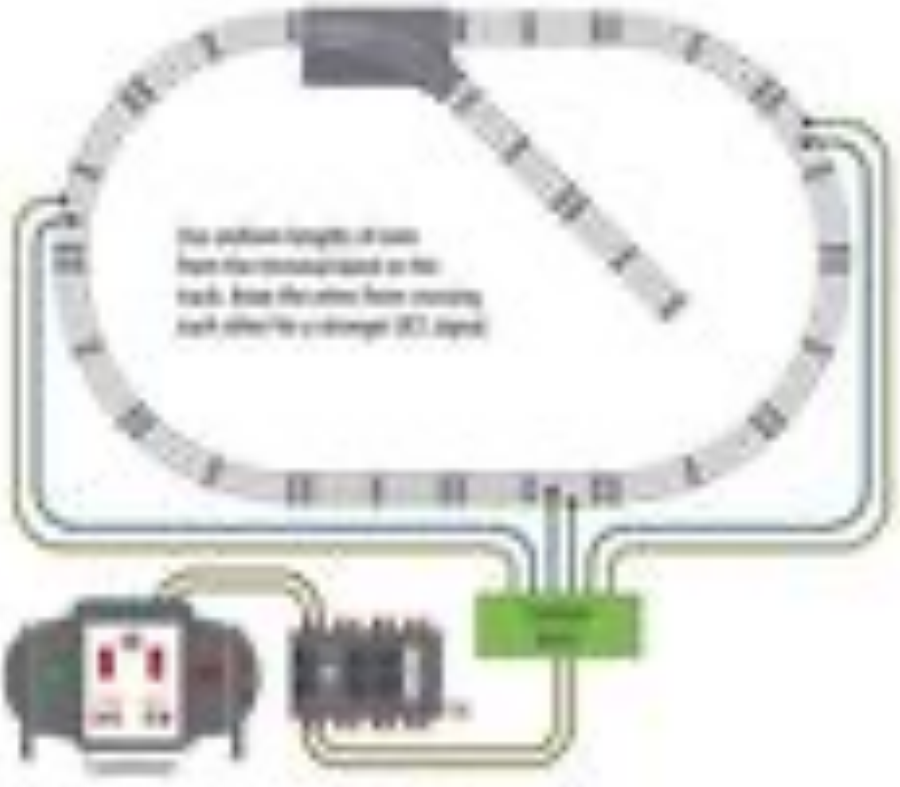
You can use an inexpensive digital music player to monitor your DCC signal strength.

Troubleshooting common problems is also an important part of the testing process. If you encounter issues such as dropped commands or erratic locomotive behavior, use the diagnostic tools provided by your DCC system to identify the source of the problem. These tools may include a voltmeter, an ammeter, or a specialized DCC diagnostic device. Once you've identified the problem, you can take steps to correct it, such as repairing a damaged wire, replacing a faulty component, or adjusting the receiver's settings.

Finally, remember to document your testing procedures and results. This will be helpful for future reference and for troubleshooting any problems that may arise later on. By following these guidelines, you can ensure that your DCC receiver is functioning properly and that your layout is ready for reliable operation.

Remove the film on black rails

A protective coating on Hornby's Railroad range of track can interfere with DCC signals.


the pulses lengths at zero from the transformer so the track. Keep the wires from crossing each other for a stronger DCC signal.

Six build, simple and complex layouts, using terminal blocks and keeping wires or cables lengths balanced helps keep a DCC signal from deteriorating.

Under-stairs IR cable routes into the kit's circuitry beneath the layout. Not only the black "cable" that DX signal, most thanks make the underside of the layout, which comes in handy when troubleshooting.

Adding an IR cable right back mounted in a simple socket can help your DX signal strength.

The light-bulb trick

Early on, hobbyists discovered that the DCC signal broke better using the "light bulb trick". A light bulb wired into the DCC's circuit "cable" like DCC signal, helping to better performance.

Why? Engineers talked DCC using lighted locomotive and were unaware of the warming effect of the lighted locomotive on the signal. A "dead" track or layout extension, when lighted locomotive, this showed it can act as a resistive material, reducing electrical hardware should use a light bulb accessories to reach DCC devices.

One easy solution is to use a lighted locomotive, but I installed an 18-watt light bulb underneath my layout where the incoming DCC wire reaches a terminal strip. Not only does the bulb catch the DCC signal, but it also glows and a warm light underneath my layout.

BANISH weak crossing gates

by Dennis Eichenberg

This circuit improves gate performance with trolleys and other four-wheel units

A decent (take-much) time-as effort no-tonight a capacitor and relay that lets your O gauge trolley consistently operate automatic crossing gates with insulated track sections. William Zuback photo

STEP 1 Relay, trolley, and capacitor

The diagram shows how a current-insulated track section is used to energize a miniature relay whenever a trolley is within the insulated section.

The heart of the system is a miniature, sensitive relay that requires very little power to energize it, but has high-current contacts capable of sensing the largest accessories. I use a Radio Shack no. 49-215 SPST relay that has a 1.6-volt DC coil and 10-amp contacts.

Because the relay coil is DC, and the track power is AC, a rectifier is required in the circuit that triggers the relay. I use a Radio Shack no. 276-1141 full-bridge rectifier to convert the track power to DC. Where it connects to the relay coils it's rated at 100 volts DC and 1.5 amps, which is more than adequate for this application.

Left alone, the relay will operate intermittently with the trolley because the four-wheel trolley has poor conductance through its wheels and axles. I corrected this problem by connecting a Radio Shack no. 80-270 1000 µf capacitor (rated for 1,600 microfarads and 35 volts DC) in parallel with the relay coil.

The capacitor stores energy as the relay input energized as a trolley passes through the insulated track section. Now, instead of my crossing gate arms becoming up and down as the trolley crosses the insulated section, the gates go down and stay down for the duration. The capacitor's size makes up for the intermittent loss of power in the circuit.

STEP 2 Assembling the components

Start by placing the bridge rectifier on the bottom of the relay. Bend the rectifier's metal leads so they attach to the proper relay terminals. The polarity of the rectifier's DC terminals and the positive and negative terminals for the relay coil must be observed carefully.

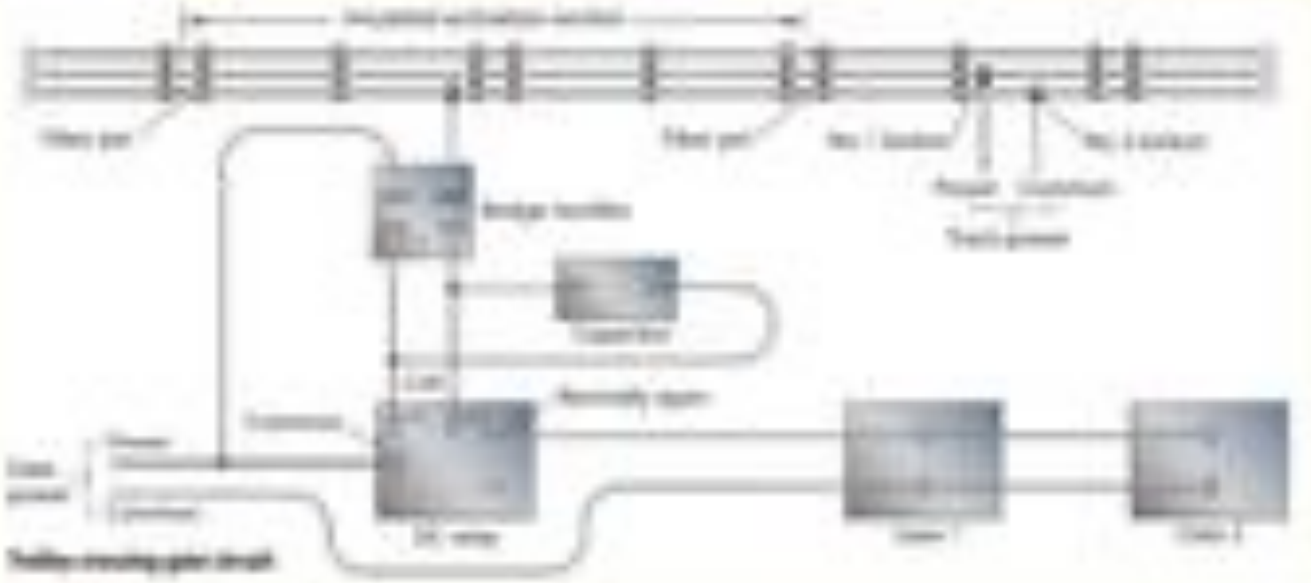
Place the capacitor beside the relay and bend the capacitor's metal leads so they also attach to the relay's coil terminals. The capacitor's polarity must also be observed carefully.

Connect three no. 18 gauge wires to the circuit. One wire is connected to the other's normally open contact. Another is linked to the relay's common contact. The third wire is connected to one of the bridge rectifier's AC inputs.

Radio Shack components

[illegible]

To order, visit your local Radio Shack, call 800-843-7422, or check out radioshack.com



STEP 3 Installing the circuit

Now decide where you want the gates to be activated. Turn insulated track sections outside just about the right length at times for the gates to be energized.

Use a plastic pin on each end of the insulated outside rail. (As most pins for all-rather locations) including One Wire between the two insulated track sections. Then add make the gates activate whenever a trolley is on either of the insulated track sections.

Install a section to power the trolley beyond the insulated track sections. Connect input power to Radio Shack rail No. 1, connect track common to Radio Shack rail No. 2. Install another section between the insulated track gaps. Connect the wire you attached to one of the bridge rectifier's AC inputs to terminal one. A of the Radio attached to the insulated track section.

Next connect 12-to-16-volts AC as source power for the previously attached wire going to the common terminal of the relay contacts. The same power wire should be tapped off and connect to the remaining AC terminal of the bridge rectifier. Connect the wire from the normally open contact of the relay to one of the crossing gate terminals.

Lastly, connect the other gate terminal to the track Remember, whichever wire. These connections let the gate open and properly with minimum impact on the trolley operations.

The circuit components are small enough to be installed inside a small structure or something similar to hide them. Because the components don't get hot, you can also install them beneath your layout.

Now you're ready to get your trolley moving. The only maintenance you'll need to do is periodically clean the insulated track sections and the trolley wheels so good electrical conduction is available to operate the gates.

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Pizza Parlours

A little-used approach to modular building construction

Ten years on from the first attempts, **[illegible]** presents an update.

Abb. 1: Ausschnitt aus einer Seite des Codex Sinaiticus (Leipzig, Universitätsbibliothek, Cod. Sin. 1, fol. 1r). Die Handschrift wurde im 4. Jahrhundert in Griechisch geschrieben und enthält das Alte und Neue Testament. Sie gehört zu den ältesten vollständig erhaltenen Bibelhandschriften. Foto: Universitätsbibliothek Leipzig, CC BY-NC-SA 4.0.

Abb. 2: Blick in den Lesesaal der Universitätsbibliothek Leipzig. Die Bibliothek ist zentrale Einrichtung für Literatur- und Informationsversorgung in Forschung, Lehre und Studium. Foto: Universitätsbibliothek Leipzig, CC BY-NC-SA 4.0.

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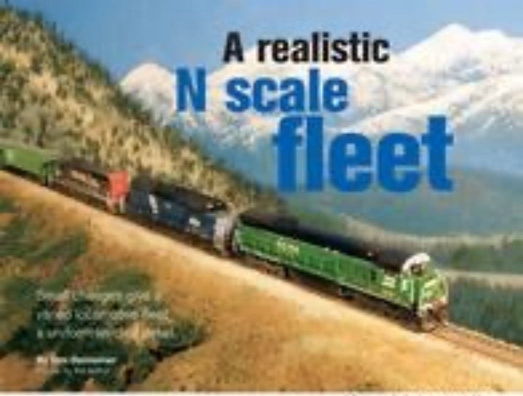

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BNSF GASH 9-44CW 782

MRL SD40-2XR 260

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BN SD60MAC 6000

MRL GP9 127

While the 7-11 (page 42), the GP9 was released in 1959, more than ten years before a different time than that of the 7-11. This locomotive also sports non-mounted air tanks.

I chopped the original fillet hole, then added grab irons. Then finished the cab using the windshield and number box windows from an Atlas GP40.

MRL GD1 607

In honor MP locomotive no. 607 was acquired by MRL in 1986. The only recent features now missing that in the cab and at a different angle from new appeals. The two steps on the hood are also modified. On the side, the road white, normally would be toward the back.

I turned detailed decades and scratch-used the Atlas GD1.

BN SD60M 1001

This locomotive was delivered in 1991 in a unique paint scheme honoring BN employees serving in the Persian Gulf War. It has since been repainted in BNSF's Heritage II scheme and renumbered 9999.

I painted detailed, detailed, and weathered the Atlas SD60M. I re-located the white paint trim, followed by red and blue.

ATSF DASH 9-44BW 518

A 4,000 hp locomotive, no. 518 was built for Santa Fe by GE in 1995. Most of the warbonnet painted locomotives have been a bi-annual pain.

This is an Atlas model with very little added except for the weathering. The faded paint was done by airbrushing thinned white paint over the entire model. I also used pastel chalk powders to simulate peeling paint.

BN GP38 2031

This locomotive was one of a few hundred Grand Northern high-hood GP38s that made it into the 1980s. These GP38s were built as new long-hood forward.

I started this project with an undecorated Atlas GP38. I cut off the low hood and removed the cab. I added a high hood and cab from an Atlas GP9. I painted, detailed, decaled, and weathered the locomotive.

BN GP50 3140

BN C&S-7 6004

BRL SD10-1 601

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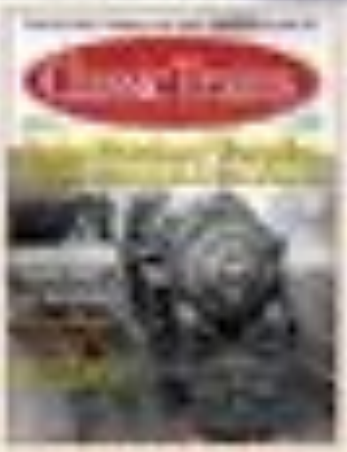

Summer 2005 Edition

[illegible]

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ABCs of consisting

Digital Command Control offers a variety of wiring options for running multiple-unit locomotives.

Not all wirings wired. Just one wire runs from a mass-sized locomotive together and can back from one unit, one can do the work. Using only Digital Command Control (DCC), an MU consisting could require seven wires to connect two locomotives, one of which is a "consist-only" decoder. There are three different types of consisting — address-mapped, and advanced — and some DCC systems support all three.

Before a locomotive is in a consist, it's under its own unique address. Each method has its own advantages and disadvantages. The key is to choose a consisting method that works best for your layout.

Address consisting. The simplest way to run up a locomotive consist is to program all the decoders for the engines you want to run to the same address. This is called "address" consisting. You can see when the command from digital controller, but it causes the current address of the decoder.

All DCC systems can support address consisting, but there are some advantages to using this method. It's reasonably simple, one can operate it can locomotive with one or two DCC-equipped locomotives and one non-DCC locomotive is required to control power to all the locomotives in the consist. It's in place the significance of that later.

The disadvantages of address consisting are that you need more power cars or units because each addressed unit. Each one change the consist. With some DCC systems this type of programming requires you to enter the locomotive

must run at a time to view and programming track or under the changes. You'll also need to remember or change configuration variable (CV) 19 as the "consist" setting for any locomotive you wish to have be operated from the consist. Remember that you can't control the functions of an individual locomotive in this type of consist — if you want to the lights for the lead locomotive, the lights come on for all the locomotives in the consist.

Address consisting is not needed for permanently coupled locomotives such as a set of F units or other road locomotives that always run together. However, this type of consisting makes it difficult to break up and reassign groups of locomotives quickly.

Standard consisting. Also called normal consisting, this method is used by CVP and Digitrax systems. In this process, two of consisting and Lenz and NCE systems support it. With standard consisting the DCC system's command station keeps track of which locomotives are running as locomotives, and the individual decoders. Because no decoder programming is required and locomotives decoder will work in the case of a consist. Each individual locomotive can be controlled for running consistently in the locomotive. Instead of a consist address, one locomotive is the "lead" locomotive and the others "follow" the lead locomotive in the group.

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Kato EMD SD38-2

by Rich Picatello

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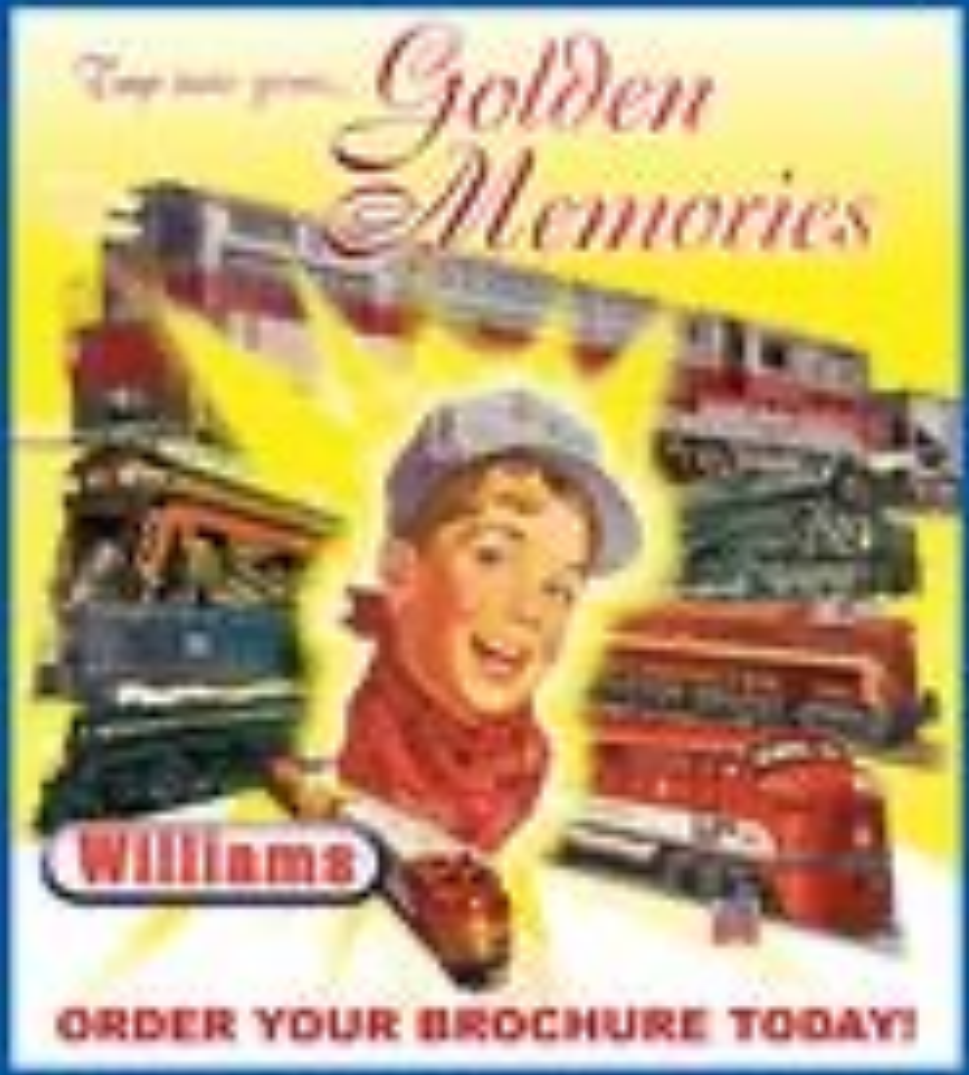

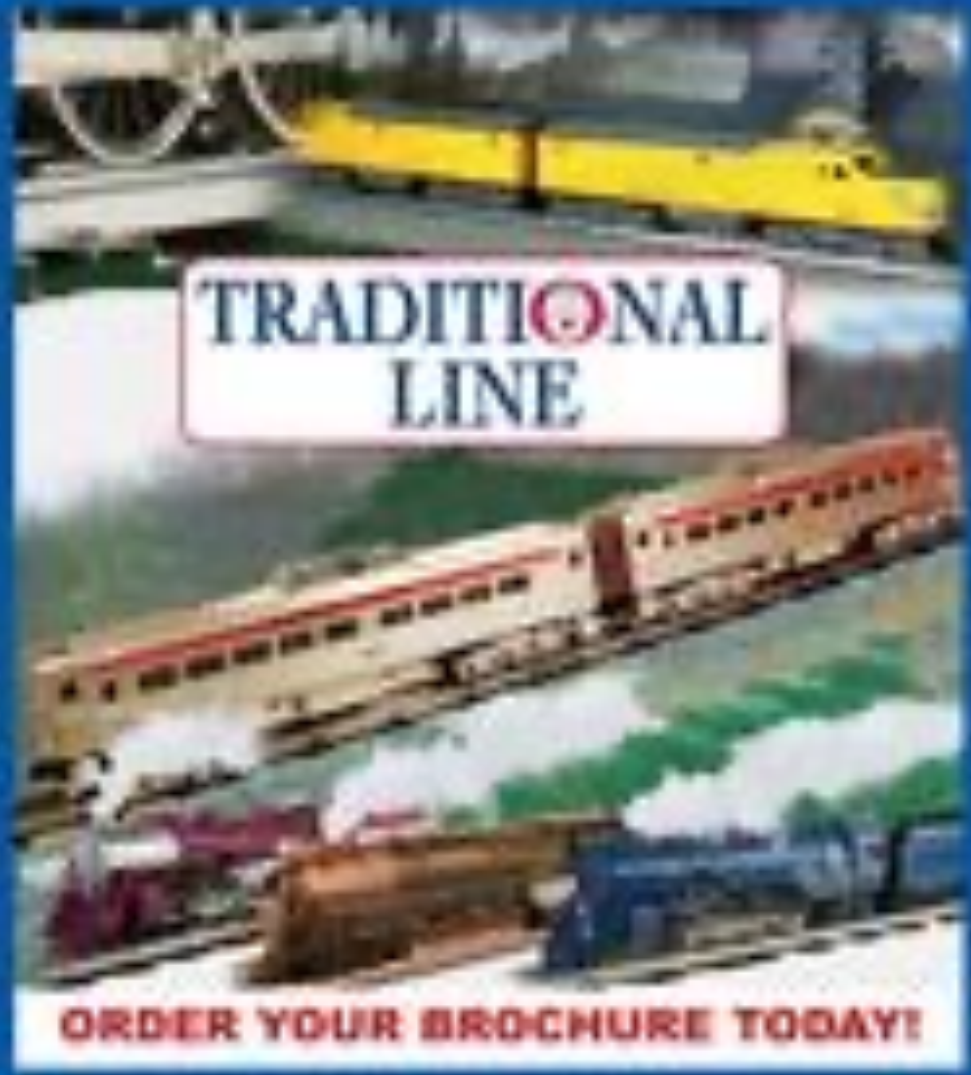

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